

Exhibit 90



A Philadelphia city elections official demonstrates how to use ES&S' ExpressVote XL machine in June 2019. (Matt Rourke/AP Photo)

The Market for Voting Machines Is Broken. This Company Has Thrived in It.

Half the country votes on machines made by ES&S. Many experts and election officials say the manufacturer remains dominant because there's little government regulation and almost no oversight.

by Jessica Huseman, Oct. 28, 2019, 2:20 p.m. EDT

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In the glare of the hotly contested 2018 elections, things did not go ideally for ES&S, the nation's largest manufacturer of voting technology.

In Georgia, where the race for governor had drawn national interest amid concerns about election integrity, ES&S-owned technology was in use when more than 150,000 voters inexplicably did not cast a vote for lieutenant governor. In part because the aged ES&S-managed machines did not produce paper backups, it wasn't clear whether mechanical or human errors were to blame. Litigation surrounding the vote endures to this day.

In Indiana, ES&S' systems were plagued by mishaps at the local level. In Johnson County, for instance, the company's brand-new machines

faltered in ways that made it difficult to know whether some people had voted more than once.

“ES&S misjudged the need for appropriate resources to serve Johnson County on Election Day 2018,” a report issued by state election officials later concluded. Johnson County subsequently terminated its contract with ES&S and, this September, paid more than \$1.5 million to purchase an entirely new set of equipment.

The uneven performance by ES&S in 2018, however, did little to dent its position as one of the most popular and powerful voting technology companies in the U.S. Any number of prior controversies hadn’t either.

The vote in 2006 in Sarasota, Florida, was just one. There, ES&S machines lost around 18,000 votes; it is still unclear why. The loss was far more than the margin of victory, and a lawsuit followed that ultimately resolved little. The company said in a statement that a variety of testing done on its machines supports its claim that the devices were not at fault, but the county wound up canceling its dealings with the firm shortly afterward.

Despite such stumbles, ES&S — based in Omaha, Nebraska, and employing roughly 500 people — controls around 50% of the country’s election system market, the company says, meaning that some 70 million Americans vote using the company’s equipment.

The question of the nation’s election integrity has rarely been more urgent. President Donald Trump has repeatedly made baseless claims of voter fraud. The special counsel investigation of Russian meddling in the 2016 vote produced indictments of more than a dozen foreign nationals. How and what federal authorities are doing to prevent future scandals — incidents of outside interference or basic breakdowns in accurately counting votes — has become yet one more partisan issue in a bitterly divided Congress.

A ProPublica examination of ES&S shows it has fought hard to keep its dominance in the face of repeated controversies. The company has a reputation among both its competitors and election officials for routinely going to court when it fails to win contracts or has them taken away, suing voting jurisdictions, rivals, advocates for greater election security and others.

In September 2018, ES&S filed a federal lawsuit against Cook County, Illinois, after the county awarded a \$30 million voting machine contract to another company. ES&S later dropped the lawsuit, but the dispute delayed the implementation of Cook County’s new machines, and the Chicago mayoral election this spring ultimately was conducted using the same machines that were meant to be replaced.

ES&S' lawsuits and threats of lawsuits have helped delay or thwart progress toward better voting technology even when the litigation is unsuccessful, more than two dozen election officials and voting technology experts said in interviews.

“I’d love to see a vibrant marketplace of voting technologies, with companies competing to make better products at lower prices. We have that in mobile phones, personal computers and automobiles, but we don’t have it at all with voting technologies,” said Dan Wallach, a computer science professor at Rice University who studies election systems and has testified in many such lawsuits. “These companies’ litigiousness creates a barrier to competition that becomes a barrier to improving our elections.”

ES&S is owned by the McCarthy Group, a private equity firm, and thus its financial records — revenue, profits, salaries — are not public. A spokesperson declined to make ES&S officials available for an interview for this article, and the company instead issued written responses to questions. It said its machinery and technology were ultimately found blameless in some of the election controversies over the years. In Georgia, it said that while the company was responsible for the maintenance of the machines, it was unable to make updates to the software. The state of Georgia, it said, was ultimately responsible for the mishaps.

“ES&S believes strongly in the security, accuracy and reliability of our machines,” the company said. “We’re committed to our role in democracy and protecting the right to vote.”

Asked about its history of litigation, the company said it sued only as a way to keep competitors honest: “We believe American voters deserve accountability in this industry.”

ES&S’ chief competitors — Hart InterCivic and Dominion — are not strangers to mishaps and aggressive tactics. Dominion’s most recent voting technology failed certification in Texas, and the state also saw hundreds of aging Hart machines confusing voters and leading to accusations of vote flipping. Both companies have sued customers and each other. But industry experts insist ES&S, in part because it has been around and dominant for so long, is in a category of its own.

Whatever the merits of ES&S’ performance, election officials and experts interviewed by ProPublica say the problems with the country’s voting systems go well beyond one company. They say the very nature of the industry and the way it’s regulated work against innovation and reward the tiny handful of often trouble-plagued companies that have been around for decades.

Along with going to court, ES&S had held onto the lion’s share of the nation’s election technology business by using a variety of controversial tactics, its critics say. For years, ES&S has required states and counties that

buy its machines to sign long-term deals that often obligate them to purchase a vast array of other equipment and supplies from the company. ES&S also has made it a practice to hire former election officials as lobbyists in statehouses around the country. And it has donated to individual campaigns and spent money to lobby local and federal politicians at levels far higher than its competitors.

ES&S defended its practices, saying that lobbyists play an important role in monitoring new legislation, and that ES&S is in compliance with all state and federal laws related to lobbying. “Lobbyists help ensure legislators have accurate information for use in serving the best interest of the citizens they represent,” it said. “Lobbying is a normal practice employed by all election vendors and is common across all industries.”

In August 2018, Louisiana announced it would replace its old voting machines and awarded a \$95 million contract to a rival of ES&S, which was the lowest bidder. ES&S filed a complaint that accused the state of writing its request for proposals so that only the other company’s machines would satisfy the terms. Shortly after, Gov. John Bel Edwards canceled the deal, effectively siding with ES&S and forcing the state to start the process over again.

“The governor’s administration just sided with a company that was \$40 million more expensive,” Louisiana Secretary of State Kyle Ardoin said in a statement after the cancelation.

In a statement, the governor’s office said that the cancelation was justified. The office also laid the blame at the feet of the secretary of state’s office, which it said added “additional requirements” to the bid “just days before the responses were due.”

Louisiana campaign finance records show that an ES&S lobbyist in Baton Rouge has donated \$13,250 to Edwards’ campaigns since 2014.

Louisiana still has not obtained new voting machines, and the state is expected to cast ballots in 2020 on the same machines it’s had since 2005.

Sen. Ron Wyden, D-Ore., is among a number of legislators pushing the federal government to better oversee the quality of local election technology, from voting machines to voter registration databases.

To begin the process of assessing the security and reliability of voting machines across the country, Wyden this year sent a detailed questionnaire to all of the major manufacturers seeking information on security and other aspects of their operations. Wyden later said the companies, ES&S among them, offered little in the way of response.

ES&S maintains there is no need for tighter regulation or oversight of its business. The company said in a statement that Wyden “is entitled to his

opinion,” but that it had responded to his requests in “a timely manner” and had invited him to come review its operations.

“The evidence shows the market functions properly,” it said. “One, our products have delivered secure, accurate elections. Two, we see robust competition every day through competitive bid processes. Three, ES&S devotes significant resources to research and development.”

Wyden disagrees.

“The market is broken,” Wyden said. “Markets work well when you have tough standards, when you have real regulations and vigorous oversight. And here you have none of that.”

The concept of voting machines has existed for as long as there has been a widespread popular vote. The earliest machine was devised by the Chartists in the 1800s in Britain; voters dropped a brass ball into the hole of the candidate of their choice.

The first American patents for voting machines were approved in the late 1800s, and the most promising had push buttons for each candidate, with locks behind the buttons to prevent voting for more than one. These machines, which allowed for secret ballots, were seen as the solution to rampant vote buying, and they remained the way America voted for decades.



A voting booth used in Los Angeles County. (Liz Kuball, special to ProPublica)

Punch card voting technology emerged in the 1960s, allowing voters to punch holes in cards to select candidates with a “ballot marking device.” The holes were used to quickly sort the votes and count the winners. The most popular system was the Votomatic, owned by IBM, which came to be used in nearly 40% of election jurisdictions in the U.S. before IBM got out of the business in 1969.

More recently, states and counties have switched to machines that offer electronic options: optical scanners and machines that mark ballots for voters — most with paper trails and some without. While the vast majority of Americans vote using paper — either directly onto paper or on a

machine that produces a paper back up — only a small number of counties count these ballots without the help of machines.

Electronic technology, whatever improvements it offered, brought a host of new challenges: counties struggled to keep up with the costs of updating the machines, and the additional technology introduced multiple points of potential failure.

Bob Urosevich of Omaha, the founder of ES&S, has told reporters he entered the voting machine industry as something of a pioneer in the move to electronic voting in the 1970s. Urosevich told local news outlets he'd come up with his idea for electronic voting machines while working as a salesman selling paper for ballots to his local county.

Recalling the process by which standardized tests were graded, he convinced the county to test optically scanned bubble sheets as voting tools. The company that would become ES&S was founded in 1979, after Urosevich tried out his idea in a primary. Douglas County in Nebraska was Urosevich's first contract.

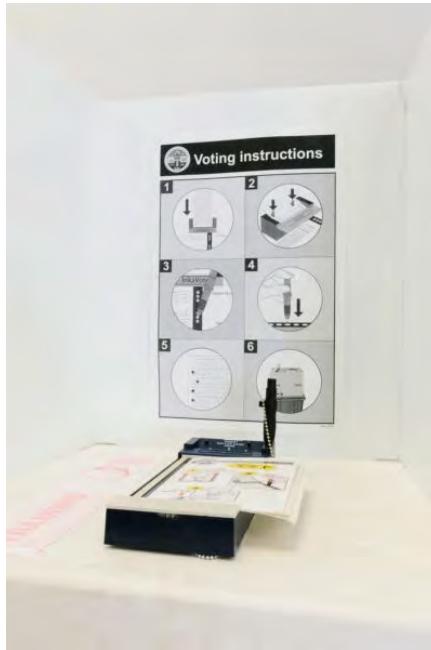
Urosevich later left ES&S in the hands of his first hire, his brother Todd, and went to run Global Elections Systems, the voting machine arm of Diebold, a major security and financial technology company.

In 2003, Diebold's CEO caused a controversy when he became a top fundraiser for George W. Bush and promised to help Ohio "deliver its electoral votes to the president." While there is no evidence the CEO actually manipulated his company's machines to alter the vote in Ohio — it went for Bush — the dispute and a host of issues involving the effectiveness of its technology led Diebold to sell off the voting business in 2009.

ES&S purchased many of Global Elections Systems' machines and contracts, and, as a result, it controlled some 70% of the voting technology market at that time.

ES&S — headquartered in a low-slung white building on Omaha's John Galt Boulevard (named for the central character in Ayn Rand's "Atlas Shrugged") — had made such acquisitions of smaller voting companies before, nearly half a dozen. Most frequently, the company bought the machines and took over the contracts. Bloomberg News reported that ES&S occasionally repackaged the machines and sold them as new technology, a claim the company disputed when asked about it by ProPublica.

The voting technology industry is a small one, and one that major technology companies such as Microsoft and Apple have not entered. The entire sector generates only about \$300 million in revenue annually, according to Harvard professor Stephen Ansolabehere, who studies



ES&S' InkaVote system employs an ink marking device and an optically scanned bubble sheet. (Liz Kuball, special to ProPublica)

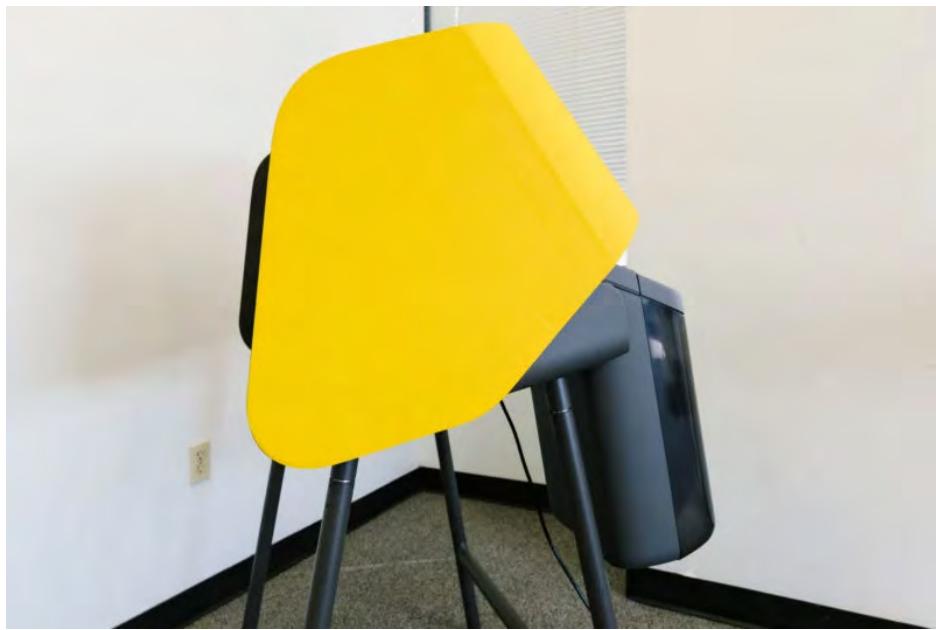
elections and formerly directed the Caltech/MIT Voting Technology Project. That's far short of what Americans spend annually on Halloween costumes for their pets.

While other types of technology companies must typically invest and innovate to thrive, voting machine manufacturers have shown little similar inclination. Over time, the industry has shifted from making money on the voting equipment itself to making money on services and supporting materials, not unlike what the early cellphone companies did — sell the phone for cheap, then bring in far more with long-term service contracts and data plans.

In a statement, ES&S said such servicing and maintenance contracts were optional, although experts and election officials say it's a claim without much practical significance, since it's next to impossible to hire someone else to service ES&S' technology. ES&S' machines — like those of other voting manufacturers — also require specialized hardware only available through the company.

ES&S and the other two major companies — Dominion, which has about 30% of the market, and Hart InterCivic, which has about 15% — have similar business models. Each has a large sales force that pushes its products, services and maintenance help to counties across the country. Comparatively little of their workforces are devoted to engineering or product development.

“None of these companies are particularly incentivized to invest in their engineering process to make something that is outrageously better than what’s out there now,” Wallach said.



A prototype of the state-of-the-art machine Los Angeles County contracted a tech company to produce. (Liz Kuball, special to ProPublica)

In Los Angeles County, one of the largest election districts in the country, Dean Logan in 2018 had orchestrated what seemed like a breakthrough in the troubled history of America's voting machines. Logan, the county's top election official, had contracted with a tech company that had done important work for Apple. He wanted the company to design what he regarded to be a state-of-the-art voting machine.

The machines had voters use a tablet perched in an artfully designed yellow privacy booth to fill in their ballots, then printed them out to be reviewed. Then, the finished ballot was sucked back in, like a dollar into a vending machine, and placed in a bin. The machines were nearly fully collapsible and made with off-the-shelf products that would allow the county to keep them updated at a low cost.

The machines also had other features that most of the technology currently in use doesn't. They allowed voters to toggle between languages and were designed in consultation with disabled voters so that they could cast ballots on the same machines as everyone else, rather than being relegated to a separate system (that poll workers are often untrained to use).

Logan had a simple explanation for the county's decision to design its own system. "We couldn't find anything out there that would work for us," he said.

The election security community and disability rights groups widely embraced the new machines as an exciting step forward. Not ES&S.

ES&S sued the two companies that bid on producing the county's machines, alleging that because Los Angeles County had shown the final

designs — which they contend violate two ES&S patents — to the companies in order to generate bids for building them, they'd knowingly benefited from ES&S' work. ES&S alleges that Smartmatic, the company selected to build the machines, "has committed and continues to commit" infringements on the company's patents by producing and intending to distribute the machines. The suit is active.

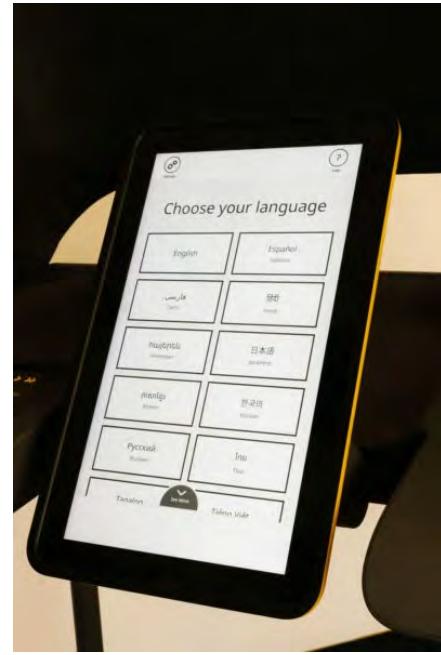
ES&S files many such suits. In May 2016, for instance, ES&S unsuccessfully sued Colorado over its decision to buy statewide uniform voting equipment after the state moved to a vote-by-mail system. The company also sued Colorado county over the issue, and it lost these cases as well.

In Wisconsin, after the 2016 national elections, ES&S sued to prevent Jill Stein, a Green Party candidate for president, from obtaining information about its machines that might have assisted her in her bid for a recount. A judge rejected ES&S' argument that submitting to Stein's request would compromise its proprietary technology.

ES&S and Dominion have appealed the decision. ES&S said in a statement that the technology Stein was seeking to examine was routinely tested by state and federal agencies or their officials.

ES&S has also threatened lawsuits against voting rights activists. In 2018, it warned it would sue Audit USA — a small nonprofit that advocates for election security — for posting the company's manuals for scanners online (it hasn't done so). The same year, the company repeatedly said it would initiate litigation against security researchers who bought old ES&S machines and attempted to hack them at a conference on cybersecurity. The company also sent letters to its own customers, saying it would sue them if they participated in such conferences or provided ES&S equipment to the events.

"We bought a bunch of surplus voting machines on eBay and put them in a room. I believe many of our foreign adversaries already have eBay capability, so perhaps it would be prudent to use election equipment that can withstand eBay-based threats," tweeted researcher Matt Blaze in response.



Los Angeles County's machine allows voters to toggle among languages. (Liz Kuball, special to ProPublica)



After ballots are printed and reviewed, the machine sucks them back in. (Liz Kuball, special to ProPublica)

J. Alex Halderman, a computer scientist at the University of Michigan who studies election equipment, said that while the legal tactics may not scare researchers like Blaze, it has chilled the relationship between researchers and public officials.

“The vendors have made election officials fearful of working with researchers to independently test equipment,” he said.

Logan, the Los Angeles County voting official, says he believes part of ES&S’ intent in suing was simply to delay the move to better equipment, even if only temporarily. County officials expect that Smartmatic, the company that won

the contract, will eventually have to pay to make ES&S relent.

Logan, for his part, insists his new and improved machines will be in place for 2020.

“We’re on track,” he said.

Wallach, the professor at Rice University, said ES&S behaves “like a patent troll,” a company that serially sues competitors, alleging debatable patent violations.

“Whenever they don’t get what they want, they throw everything at the wall to see what will stick,” Wallach said.

The money Smartmatic will likely send ES&S’ way is a “standard dance,” Wallach said, which increases the likelihood ES&S (and other major machine companies) will file similar suits in the future.

“It makes it hard for smaller companies to do business in this space,” he said. “You could be innovating and working on products, and instead you’re dealing with this. Paying for this.”

Asked about Wallach’s “patent troll” comment, ES&S said, “Again, we believe we have the right to protect our intellectual property.”

In the U.S., government regulation of voting machines and the manufacturers that make them is limited, chiefly amounting to a



Dean Logan is the top election official in Los Angeles County. (Liz Kuball, special to ProPublica)

certification process voting machines are required to undergo. The process is conducted by the Election Assistance Commission, the federal agency charged with assisting states and counties in conducting safe and reliable elections.

Under the process, the commission sends the machines manufacturers want to sell to one of two independent labs for testing. These labs test the machines on a variety of requirements outlined in the Help America Vote Act of 2002 — federal law that sought more funding and minimum

standards for state voting systems after the calamitous 2000 election — including security and accessibility for the disabled. Many states will not allow machines to be purchased unless they meet all the requirements.

But the limited certification process, according to election officials, voting rights advocates and any number of federal lawmakers, can make it more difficult to bring new products to market.

The process is expensive, for one, a hurdle that small, creative companies often find prohibitive. A report by the University of Pennsylvania's Wharton Public Policy Initiative said it can easily cost upward of \$1 million to undergo certification.

As well, the federal legislation governing the certification process is either out of date or poorly conceived, critics say. It requires that manufacturers submit voting “systems,” meaning that companies that would like to specialize in a single part of the voting process are unable to be certified. Several companies have tried to produce only high-speed scanners, or only accessible voting machines, but they have been denied the chance to be certified.



Voting machines stored in a warehouse in San Diego. (Liz Kuball, special to ProPublica)

Because of this structure, set up in 2002, the market inherently gives an advantage to older companies such as ES&S, election officials and advocates assert.

Not a single new set of proposed machines have been certified in the last three years, a time of technological advances and increasing election insecurity.

Perhaps not surprisingly, the last two major meetings of the EAC and local election officials about the certification process have resulted in screaming

matches over the slow pace of progress.

In a statement, ES&S said the certification protocols in place had proven effective, adding that it was working along with others to make the process faster.

There are efforts afoot to improve U.S. voting technology, including work by nonprofit organizations to produce better machines. Perhaps the most well-known is VotingWorks, a nonprofit launched by Ben Adida and Matt Pasternack that aims to create an open-source voting machine made from affordable, off-the-shelf parts.

“Right now, machines are all custom hardware. When you consider the small size of the market, that doesn’t make sense,” he said. “It’s not surprising that machines are this expensive when you’ve got custom hardware, custom software, custom everything.”

Adida says building voting machines with off-the-shelf products also means the machines will improve as parts are replaced with more advanced technology. “When you are using commercial, off-the-shelf platforms, you start to get security features for free because they are automatically built in the equipment,” he said. “Why wouldn’t we use them?”

The machine VotingWorks produces could solve many of the problems critics point to in how companies like ES&S have come to operate. VotingWorks promises to be transparent in its pricing, and it doesn’t require long-term maintenance contracts. In fact, Adida says it won’t require maintenance contracts because the machines will be simple enough for municipal employees to learn to program and repair themselves.

ES&S, on the other hand, makes the vast majority of its money off long-term maintenance contracts. Fairfax County, Virginia, for example, recently finalized a \$6.5 million deal with ES&S, which included a \$1.5 million pre-payment for annual service contracts. Under the deal, the county will pay that amount four more times.



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